

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent application of:

Applicant: Manz et al.
Serial No: 10/523,035
Filing Date: January 5, 2006
Title: POWDER MIXING MICROCHIP, SYSTEM AND METHOD
Examiner: David L. Sorkin
Art Unit: 1797
Docket No. FRYHP0131US

PRE-APPEAL BRIEF REQUEST FOR REVIEW

MS AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Applicant requests review of the final rejection in the above-identified application.
No amendments are being filed with this request.

This request is being filed with a notice of appeal.

The review is requested for the reasons stated on the attached sheets.

In the event any fee or additional fee is due in connection with the filing of this paper, the Commissioner is authorized to charge those fees to our Deposit Account No. 18-0988 (under the above Docket Number).

Respectfully submitted,

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ADDENDUM TO PRE-APPEAL BRIEF REQUEST FOR REVIEW

The Examiner is alleging that the subject-matter of claims 1 to 3 and 5 to 43 is anticipated by Gilbert *et al* (US-6883957). This is not the case.

Claim 1 is directed to a powder mixing microchip which requires *inter alia* a **powder mixing unit** for mixing a plurality of powder components to provide a **powder mixture**.

There is no disclosure in Gilbert *et al* of a powder mixing unit for providing a powder mixture of a plurality of powder components. Rather, Gilbert *et al* is directed to an on-chip dilution system for diluting chemical compounds, and this on-chip dilution system is not capable of mixing a plurality of powder components to provide a powder mixture.

In Gilbert *et al*, a chemical compound sample, contained in a sample well (20), is diluted with a diluent, contained in a dilution well (30) [column 7, lines 60 and 61 and column 3, lines 53 to 56]. In Gilbert *et al*, dilution is achieved by a first syringe pump (50), which draws diluent from the dilution well (30) and sample from the sample well (20) through dilution channels (31, 51) [column 5, lines 27 to 31], and the dilution ratio is determined by the position of the variable valve (33) [column 5, lines 22 and 23], which regulates the flow of liquid through the dilution channel (31) [column 4, lines 64 to 66].

It appears that the Examiner is suggesting that the on-chip dilution system of Gilbert *et al* is capable of diluting a powder sample, and hence would provide the powder mixing unit of claim 1. This is absolutely not the case.

In Gilbert *et al*, if a powder sample were to be contained in the sample well (20), the action of drawing a diluent flow through the dilution channels (31, 51) would not be to draw powder from the sample well (20). In Gilbert *et al*, sample is drawn from the sample well (20) by the effect of the first syringe pump (50) only because the chemical compound sample is a liquid, which isolates the sample channel (21) from atmosphere, leading to the creation of a pressure differential, which causes sample to be drawn from the sample well (20) into the sample channel (21) and the dilution channel (31). If a powder sample were to be contained in the sample well (20), no such pressure differential would be created, as the powder sample would not isolate sample channel

(21) from atmosphere, and, if the powder sample were packed into the sample well (20) so as to isolate the sample channel (21) from atmosphere, the powder sample would be immovable.

This notwithstanding, even if the on-chip dilution system of Gilbert *et al* were capable of diluting a powder sample, which we submit it manifestly cannot, the diluted sample would be a liquid, as a result of introducing the powder sample into the liquid diluent, whereas as claim 1 contrarily requires that the powder mixing unit provides a ***powder mixture***.

Accordingly, it is submitted that the subject-matter of claim 1 is patentably distinguished over the disclosure of Gilbert *et al*.

As regards the dependent claims (claims 2, 3 and 5 to 43), it is submitted that these claims are dependent upon an allowable independent claim (claim 1), and, as such, are themselves allowable.

It is noted that the Examiner has commented that “unit (50/500)” is capable of supplying gas.

It is presumed that this comment is made in relation to claims 40 to 43, which require *inter alia* at least one gas supply unit for supplying a pressurised gas at least to mixing gas supply channels.

In Gilbert *et al*, the reference signs 50 and 500 are used to designate syringe pumps. There is, however, no disclosure in Gilbert *et al* of the operation of the syringe pumps (50, 500) to generate a pressurised gas. Indeed, such operation would be contrary to the disclosure of Gilbert *et al*, insofar as the use of the syringe pumps (50, 500) to deliver a pressurised gas would be to expel sample from the sample well (20) and diluent from the dilution well (30), rendering the dilution system of Gilbert *et al* inoperable.

As such, it is submitted that the skilled person, contrary to the Examiner’s allegation, would have understood the syringe pumps (50, 500) incapable of operating to provide a pressurised gas, in the manner as required by claims 40 to 43.